



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICANTS: Leonid Grigorian et al.  
APPLICATION NO.: 09/825,870  
FILING DATE: April 5, 2001  
TITLE: Chemical Vapor Deposition Growth of Single-Wall Nanotubes  
EXAMINER: Peter J. Lish  
GROUP ART UNIT: 1754  
ATTY. DKT. NO.: 23085-08328

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below:

Dated: November 6/2003

By: Narinder S. Banait  
Narinder S. Banait, Reg. No.: 43,482

COMMISSIONER FOR PATENTS  
P.O. BOX 1450  
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**INFORMATION DISCLOSURE STATEMENT**  
**Under 37 CFR §§ 1.56 and 1.97-98**

SIR:

Pursuant to the provisions of 37 CFR §§ 1.56 and 1.97-98, enclosed herewith is modified form PTO/SB/08A listing references for consideration by the Examiner. Enclosed is a copy of each listed reference that may be material to the examination of this application, and for which there may be a duty to disclose, and a copy of the International Search Report.

The filing of this Information Disclosure Statement shall not be construed as a representation regarding the completeness of the list of references, or that inclusion of a reference in this list is an admission that it is prior art or is pertinent to this application, or that a search has been made, or as an admission that the information listed is, or may be considered to be, material to patentability, or that no other material information exists, and shall not be construed as an admission against interest in any manner.

This Information Disclosure Statement is being filed:

- ☐ within three months of the filing date of the application, or date of entry into the national stage of an international application, or before the mailing date of a first office action on the merits, whichever event last occurred;
- ☐ before the mailing of a first official action after the filing of a request for continued examination (RCE) under 37 CFR § 1.114;

- ☐ after three months of the filing date of this national application or the date of entry of the national stage in an international application, or after the mailing date of the first official action on the merits, whichever event last occurred, but before the mailing date of the first to occur of either: (1) a final action under 37 CFR §1.113; or (2) an action that otherwise closes prosecution in the application, and:
  - ☐ attached hereto is the fee set forth under 37 CFR §1.17(p) for submission of this Information Disclosure Statement under 37 CFR. § 1.97(c); OR
  - ☐ Applicant certifies pursuant to 37 CFR § 1.97(e) that:
    - ☐ each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement; OR
    - ☐ no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Statement was known to any individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement;
- ☒ on or before the payment of the issue fee but after the mailing date of the first to occur of either: (1) a final action under 37 CFR § 1.113; (2) a notice of allowance under 37 CFR § 1.311; or (3) an action that otherwise closes prosecution in the application, and:
  - ☐ Applicant certifies pursuant to 37 CFR. § 1.97(e) that:
    - ☒ each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign; or
    - ☐ no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in this Statement was known to any

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individual designated under 37 CFR § 1.56(c) more than three months prior to the filing of this Statement; AND

☒ attached hereto is the fee set forth under 37 CFR §1.17(p) for submission of this Information Disclosure Statement under 37 CFR. § 1.97(c); OR

☐ after the payment of the issue fee. Applicant requests that the information contained in this Information Disclosure Statement be placed in the file according to 37 CFR § 1.97(i), although the information may not be considered by the USPTO.

☐ This application relies, under 35 U.S.C. § 120, on the earlier filing date of prior application No. APPLICATION NO., filed on DATE FILED, and the references cited therein are hereby referenced, but are not required to be provided in this application under 37 CFR § 1.98(d).

☐ Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not received by any individual designated in 37 CFR § 1.56(c) more than thirty days prior to the filing of this Information Disclosure Statement. 37 CFR § 1.704(d).

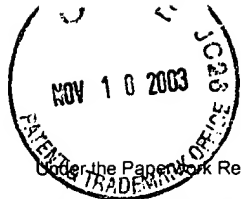
☐ Applicant submits that no fee is required for the consideration of this Information Disclosure Statement.

Consideration of the listed references and favorable action are solicited.

Respectfully submitted,  
LEONID GRIGORIAN ET AL.

Dated: November 6/2003

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Substitute for form 1449A/PTO				Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				Applicant No.	09/825,870
				Filing Date	April 5, 2001
				First Named Inventor	Leonid Grigorian
				Art Unit	1754
				Examiner Name	Peter J. Lish
Sheet	1	of	1	Attorney Docket Number	23085-8328

U.S. PATENT DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Document No. Number – Kind Code <sup>2</sup> (if known)	Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		US-		

FOREIGN PATENT DOCUMENTS				
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> – Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		WO 01/49599 A2	July 12, 2001	Jie Liu

OTHER REFERENCES – NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>6</sup>
		AVDEEVA, LYUDMILA B. ET AL.: "Iron-containing catalysts of methane decomposition: Accumulation of filamentous carbon", Applied Catalysis A: General, March 28, 2002, pages 53-63, vol. 228, no. 1-2; Elsevier Science B.V.	
		CASSELL, A.M. ET AL.: "A large scale CVD synthesis of single-walled carbon nanotubes", Chemical Physics Letters, May 5, 2000; August 5, 1999, pages 6484-6492; Journal of Physical Chemistry	
		HARUTYUNYAN, A.R. ET AL.: "CVD synthesis of signal wall carbon nanotubes under 'soft' conditions", Nano Letters, May 2002, pages 525-530, vol. 2, no. 5; American Chemical Society, USA	
		PEIGNEY, ALAIN ET AL.: "A Study of the Formation of Single- and Double-Walled Carbon Nanotubes by a CVD Method", October 11, 2001, pages 9699-9710; Journal of Physical Chemistry, American Chemical Society, USA	
		PEIGNEY, A. ET AL.: "Carbon Nanotubes-Fe-Alumina Nanocomposites. Part 1: Influence of the Fe Content on the Synthesis of Powders", Journal of the European Ceramic Society, December 1, 1998, pages 1995-2004; vol. 18, no. 14; Elsevier Science Publishers, Barking, Essex, Great Britain	
		MING, SU ET AL.: "A scalable CVD method for the synthesis of single-walled carbon nanotubes with high catalyst productivity", Chemical Physics Letters, May 26, 2000, pages 321-326, vol. 322, no. 5; Elsevier Science Publishing	
		WEIDENKAFF, A ET AL.: "Metal nanoparticles for the production of carbon nanotube composite materials by decomposition of different carbon sources", Current Trends in Nanotechnologies: from Materials to Systems. Symposium S, Emrs spring meeting 2001, June 5-8, 2001, pages 119-123, vol. C19, no. 1-2; Elsevier, Strasbourg, France	

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.  
Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.



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PTO/SB/21 (modified)  
Approved for use through xx/xx/xx, OMB 0651-0031  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence during pendency of filed application)</i>	0001/PTO Rev. 10/95	U.S. Department of Commerce Patent and Trademark Office	Application Number	09/825,870
			Filing Date	April 5, 2001
			First Named Inventor	Leonid Grigorian
			Group Art Unit Number	1754
			Examiner Name	Peter J. Lish
Total Number of Pages in This Submission	7*	Attorney Docket Number	23085-8328	

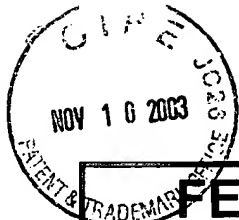
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ENCLOSURES (check all that apply)	
<input checked="" type="checkbox"/> Fee Transmittal Form (in duplicate) <input checked="" type="checkbox"/> Check Enclosed for \$180.00	<input type="checkbox"/> Issue Fee Transmittal
<input checked="" type="checkbox"/> Return Receipt Postcard	<input type="checkbox"/> Letter to Chief Draftsperson
<input type="checkbox"/> Response to Notice to File Missing Parts	<input type="checkbox"/> Formal Drawing(s): [ ] Sheet(s) of Figure(s) [ ]
<input type="checkbox"/> Assignment & Recordation Cover Sheet	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Declaration	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> Power of Attorney	<input type="checkbox"/> Certified Copy of Priority Document(s)
<input type="checkbox"/> Application Data Sheet	<input type="checkbox"/> After Allowance Communication to Group
<input checked="" type="checkbox"/> Information Disclosure Statement & PTO/SB/08A <input checked="" type="checkbox"/> Copies of IDS Cited References	<input type="checkbox"/>
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<input type="checkbox"/> Status Request	<input type="checkbox"/>
<input type="checkbox"/> Revocation and Substitute Power of Attorney	<input type="checkbox"/>

REMARKS: \*Number of pages does not include cited references

SIGNATURE OF ATTORNEY OR AGENT	
Signature:	<i>Narinder S. Banait</i> November 6/2003
Attorney/Reg. No.:	Narinder S. Banait, Reg. No.: 43,482 Dated:

CERTIFICATE OF MAILING	
I hereby certify that this correspondence, including the enclosures identified above, is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below. If the Express Mail Mailing Number is filled in below, then this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service pursuant to 37 CFR 1.10.	
Signature:	<i>Narinder S. Banait</i> November 6/2003
Typed or Printed Name:	Narinder S. Banait Dated:
Express Mail Mailing Number (optional):	



# FEE TRANSMITTAL for FY 2004

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT (\$)** 180.00

## Complete if Known

Application Number	09/825,870
Filing Date	April 5, 2001
First Named Inventor	Leonid Grigorian
Examiner Name	Peter J. Lish
Art Unit	1754
Attorney Docket No.	23085-8328

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### METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit Card ☐ Money Order ☐ Other ☐ None  
☐ Deposit Account:

Deposit Account Number 19-2555

Deposit Account Name Fenwick & West LLP

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments  
☒ Charge all required fee(s) or any underpayment of fee(s) due under 37 CFR §1.16 or §1.17 during the pendency of this application  
☐ Charge fee(s) indicated below, except for the filing fee

to the above-identified deposit account.

### FEE CALCULATION

#### 1. BASIC FILING FEE

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

**SUBTOTAL (1) (\$)** -0-

#### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims	Fee from below	Fee Paid
Total Claims	-20** =	X	=
Independent Claims	-3** =	X	=
Multiple Dependent			=

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	**Reissue independent claims over original patent
1205	18	2205	9	**Reissue claims in excess of 20 and over original patent

**SUBTOTAL (2) (\$)** -0-

\*\*or number previously paid, if greater; For Reissues, see above

### FEE CALCULATION (continued)

#### 3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	475	Extension for reply within third month	
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1,005	Extension for reply within fifth month	
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17(g)	
1806	180	1806	180	Submission of Information Disclosure Stmt	180
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR 1.129(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

**SUBTOTAL (3) (\$)** 180.00

\*Reduced by Basic Filing Fee Paid

### SUBMITTED BY

Name (Print/Type) Narinder S. Banait

Registration No. 43,482  
(Attorney/Agent)

### Complete (if applicable)

Telephone 650.335.7818

Signature

Narinder Banait

Date

November 6/2003